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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,318	10/12/2000	Sadeg M. Faris	105-096USA000	8360

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REVEO, INC.
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EXAMINER

YUAN, DAH WEI D

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 11/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/689,318

Applicant(s)

FARIS ET AL.

Examiner

Dah-Wei D. Yuan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-14,16,17,19-38 and 40-118 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-14,16,38 and 40-118 is/are allowed.
- 6) ☒ Claim(s) 17,19,22,23,30 and 31 is/are rejected.
- 7) ☒ Claim(s) 20,21,24-29 and 32-37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

FUEL CELL SUPPORT AND ELECTRICAL INTERCONNECTOR

Examiner: Yuan

S.N. 09/689,318

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November 4, 2003

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 22, 2002 has been entered. Claims 2,15,18,39 were cancelled. Claims 1,3,4,16,17,24,38,40,47 were amended. Claims 66-118 were added.

2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action (Paper No. 7).

Claim Rejections - 35 USC § 102

3. Claims 17,19,22,23,30,31 are rejected under 35 U.S.C. 102(e) as being anticipated by Stone et al. (5,415,949).

Stone et al. teach a metal air cell comprising a flexible, recloseable pouch, which is made of a gas-permeable and electrolyte-impermeable material, forming the cathode of the cell, a metal plate anode, and spacers physically isolating the anode from the cathode. A plurality of such cells are preferably stacked into a multi-cell battery, and compressed in a harness to

maintain proper anode-cathode spacing as the anode is consumed. As shown in Figure 5, anode (44) preferably comprises a flat metal plate with a highly conductive terminal (50) extending from the cell. A conductor extends from terminal (80) of the current collector to a cathode terminal (84) on the exterior of pouch cathode (42). The cells in the stack are electrically connected in series with a plurality of bus straps (101), extending between the cathode terminal of one cell, and the anode terminal of the next adjacent cell. The structure of bus straps and housing (406) are considered to be equivalent to a connector block, which independently and releasably engage the cathode and anode terminal elements. Spacing (104) for air movement is provided between adjacent metal air cells. See Abstract, Column 6, Lines 17-19, Column 7, Lines 26-28, 45-60, Figures 4 and 10.

Allowable Subject Matter

4. Claims 1,3-14,16,38,40-118 are allowed. The following is a statement of reasons for the indication of allowable subject matter: The invention of independent claim 1 recites a fuel cell battery structure comprising at least two fuel cells, a connector block disposed adjacent to one side of the at least two fuel cells. The connector block is elongated along a longitudinal axis and comprises means for electrically connecting the anodes and cathodes of the cells and further comprises at least two rows of apertures extending along the axis. The terminal conductor elements of the anodes are offset from the terminal conductor elements of the cathodes wherein the terminal conductor elements of the anodes are engaged with apertures in one of the rows and the terminal conductor elements of the cathodes are engaged with apertures of the other of the

rows. The closest prior art of record, Stone et al., does not teach or suggest the conconnector block is elongated along a longitudinal axis and comprises at least two rows of apertures extending along the axis. The invention of independent claim 38 recites a fuel cell batter device comprising a plurality of fuel cells and a connector block having a plurality of first and second engagement elements. The cathode of a given fuel cell further comprises a cathode support structure having an electrical connecting elements electrically coupled to the cathode terminating element of the given fuel cell and slidably mated with the first engagement element for the cathode of the given fuel cell. The closest prior art of record, Stone et al., does not teach or suggest the cathode support structure having a post that is slidably mated with the first engagement element for the cathode of a given fuel cell. The invention of independent claim 66 recites a fuel cell battery structure comprising at least two fuel cells, a connector block disposed adjacent to one side of the at least two fuel cells. The connector block is elongated along a longitudinal axis and further comprises at least two rows of apertures extending along the axis. The terminal conductor elements of the anodes are engaged with apertures in one of the rows and the terminal conductor elements of the cathodes are engaged with apertures of the other of the rows. The closest prior art of record, Stone et al., does not teach or suggest the conconnector block is elongated along a longitudinal axis and comprises at least two rows of apertures extending along the axis. The invention of independent claim 89 recites a fuel cell batter device comprising a plurality of fuel cells and a connector block having a plurality of first and second engagement elements. The cathode of a given fuel cell further comprises a cathode support structure and the anode of the given fuel cell comprises an anode support structure. At least one

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of the cathode support structure and anode support structure of the fuel cell has post extending therefrom that is slidably inserted into an aperture in the connector block. The closest prior art of record, Stone et al., does not teach or suggest at least one of the cathode support structure and anode support structure having a post that is slidably inserted into an aperture in the connector block. The invention of independent claims 93,97,111,112 recites a fuel cell batter device comprising a plurality of fuel cells and a connector block having a plurality of first and second engagement elements. The cathode of a given fuel cell further comprises a cathode support structure and the anode of the given fuel cell comprises an anode support structure. The cathode support structure has post extending therefrom that is slidably inserted into an aperture in the connector block. The anode support structure has post extending therefrom that is slidably inserted (mated) into an aperture in the connector block. The closest prior art of record, Stone et al., does not teach or suggest at least one of the cathode support structure and anode support structure having a post that is slidably inserted (mated) into an aperture in the connector block. The invention of independent claims 103,113 recites a fuel cell battery structure comprising at least two fuel cells, a connector block, end supports, and a support tray. The support tray, end supports and open area beneath the connector block define an air duct for channeling air to the fuel cell. The closest prior art of record, Stone et al., does not teach or suggest the use of a support to define an air duck. The invention of independent claims 106,116 recites a fuel cell battery structure comprising at least two fuel cells, and a connector block. The connector block comprises at least two lateral stepped ledges, one of the ledges comprising one of the row of apertures and another of the ledges comprising the other of the rows of apertures. The closest

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prior art of record, Stone et al., does not teach or suggest the connector block having two lateral stepped ledges. The invention of independent claims 107,117 recites a fuel cell battery structure comprising at least two fuel cells, a connector block, and a support tray. The support tray and the fuel cells comprise co-fitting key elements to help maintain the fuel cells in a fixed position. The closest prior art of record, Stone et al., does not teach or suggest the aforementioned features in the fuel cell battery device. The invention of independent claim 108,118 recites a fuel cell battery structure comprising at least two fuel cells and a connector block. The connector block that supports the fuel cells is formed from a solid base of electrical insulating material. The closest prior art of record, Stone et al., does not teach or suggest the connector block is made of electrical insulating material. The invention of independent claim 109 recites a fuel cell battery device comprising a plurality of fuel cells and a connector block having a plurality of first and second engagement elements. The anode of a given fuel cell further comprises an anode support structure. The anode support structure of the fuel cell is electrically coupled to the anode terminal element of the fuel cell and slidably mated with the second engagement element for the anode of the fuel cell. The closest prior art of record, Stone et al., does not teach or suggest the anode support structure having the aforementioned features in the connector block.

5. Claims 20,21,24-29,32-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 20,21,24-29 would be allowable because the closest prior art of record, Stone et al., does not disclose or suggest both the anode and cathode

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support structures having a post that is slidably inserted into an aperture in the connector block, respectively. Claims 32-34,36 would be allowable because the closest prior art of record, Stone et al., does not disclose or suggest the use of a support tray to define an air duct. Claims 35 would be allowable because the closest prior art of record, Stone et al., does not disclose or suggest the connector having two lateral stepped ledges. Claims 37 would be allowable because the closest prior art of record, Stone et al., does not disclose or suggest the connector block is electrically insulating.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (703) 308-0766. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Dah-Wei D. Yuan
November 6, 2003

